



PRODUCT SOLUTIONS

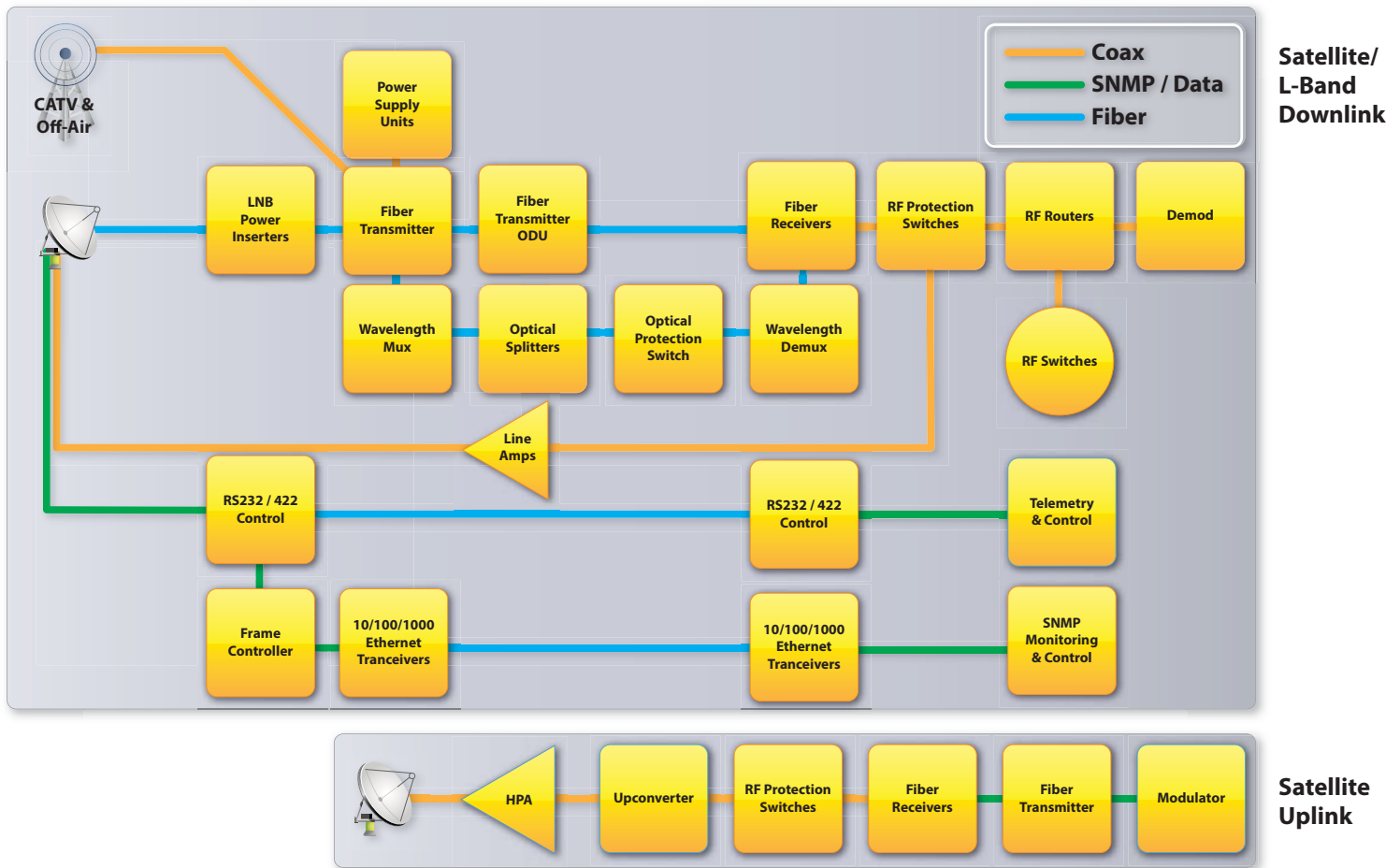
Complete RF Signal Distribution, Management and Transport



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From LNB to IRD, Evertz® offers a range of products for RF signal distribution, routing, fiber transport, amplification, slope compensation, protection switching, and LNB power. Solutions are available to cover extended L-Band, over-the-air DTV, 70/140MHz, and other signal ingest or uplink applications.



XRF1 & XRF6 RF Routers



The XRF Series RF routers (matrix switches) provide flexible routing, control, and monitoring of RF signals. With years of reliable service at installations worldwide, it is the industry's most field-proven high-density RF router platform. Leading characteristics in the areas of reliability, form-factor and performance are combined with sophisticated monitoring and control, making the XRF series the first choice for mission-critical applications.

XRF Series Common Features

- Non-blocking, full fanout architecture for multipoint distribution
- Highest density in the industry, saving valuable rack space
- Wide passband allows 70/140MHz IF, L-Band and stacked L-Band signals in a single product
- Low noise figure, high isolation (in/out, in/in, out/out) and flat frequency response preserving signal quality
- Manually adjustable and automatic gain control on each channel for signal level flexibility
- RF input power monitoring to help detect upstream faults
- Expansion beyond a single frame/chassis through high reliability SRF Series passive splitters/combiners
- Unparalleled control options including Evertz® own control panels, VistaLINK® and the MAGNUM Unified Control platform, as well as broad integration potential with third-party protocols and systems over serial and Ethernet interfaces

XRF1A 1RU 16x16 and 8x8 RF Routers

- Built-in control panel for convenient, user-friendly local control
- Redundant power supplies for reliability
- Expandable to 32x32 to accommodate growth

XRF6 6RU 64x64 Modular RF Router

- All active components are front loading & hot swappable for low MTTR
- Redundant power supplies and controllers for reliability
- Expandable to 512x512 to accommodate growth

RF Signal Management and Distribution

Modular Series: Evertz® RF fiber transport, signal distribution, bypass protection, switching, amplification, and LNB power products feature high performance and advanced features such as RF power monitoring, adjustable gain and SNMP monitoring & control. This is combined with the benefits of the 7700/7800 Series modular hardware platform. 15 slots for front-loading, hot swappable modular cards are backed by the security of redundant, hot swappable power supplies. This provides high reliability, density and easy system expansion, reconfiguration and maintenance unmatched by non-modular products. All modular products feature the ability to plug and unplug cards without removing any of the electrical or fiber cabling at the rear of the frame.



Line Amplifiers/Slope Compensation

7703PA	Single Channel Line Amplifier with Slope Control
7703PA-LNB	Single Channel Line Amplifier with Slope Control and LNB Power
7703PA-2	Dual Channel Line Amplifier with Slope Control
7803PA-2-LNB2	Dual Channel Line Amplifier with Slope Control and LNB Power

- Covers extended L-Band frequency range
- Up to 30dB of adjustable gain in 0.5dB steps with low distortion and up to 0dBm output
- Up to 15dB of slope for cable compensation, adjustable in 1dB steps
- Ideal for amplifying signals to drive long cable runs or passive distribution systems
- -LNB version provides LNB power with 22kHz tone and LNB current metering to monitor LNB health and alarm on faults

LNB Power

7702/7703LPS-2 Dual Port LNB Power Inserter

- Powers two LNBs at up to 400mA each
- Active short circuit protection - no spare fuses required
- 13/18V DC switchable with 22kHz for LNB control
- 7703 adds built-in RF power and LNB current metering to monitor signal and LNB health & alarm on faults

Protection Switches

7703BPXA-LB L-Band 2x1 Protection Switch 7703BPXA-IF 70/140MHz 2x1 Protection Switch

- Intelligent main/standby auto-switching based on user-settable RF power threshold levels
- Manual switching mode via SNMP and/or GPI allows use as a 2:1 switch

Distribution Amplifiers/Splitters

7702/7703DA4A-RF	1x4 Active RF Splitter
7702/7703DA8A-RF	1x8 Active RF Splitter
7702/7703DA16-RF	1x16 Active RF Splitter

- Wideband 40MHz to 3GHz operation to handle multiple signal types
- 7703 versions have built-in RF power meter for monitoring upstream signal strength and alarming on faults
- 7703 versions have adjustable gain from -10 to +20dB in 0.5dB steps for signal level tuning
- 7703 versions offer optional 13/18V DC (selectable) LNB power with 22kHz tone and current metering to monitor LNB health
- 7702 versions are simple zero-loss splitters

7702SP2 1x2 Passive RF Splitter 7702SP4 1x4 Passive RF Splitter

- Wideband 40-2200MHz operation to handle multiple signal types
- -LNB version passes DC power through both ports, protected by steering diodes

Selector Switches

7703R4x1-RF	1x4 Switch
7703R8x1-RF	1x8 Switch
7703R16x1-RF	1x16 Switch

- Passes DC-3GHz signals for applications including RF, CATV, analog video & audio, serial digital signals, etc.
- Bi-directional, ideal for CATV forward and return paths

PKGXRF-Nx1 32x1 to 256x1 Switching Systems

- Conveniently packaged systems including all required switches, 7800 frames, frame controllers and a system controller card
- Flexible control via control panels, VistaLINK® (SNMP) and other serial or Ethernet protocols
- Ideal for signal monitoring or test and measurement applications

Demodulators

7780DM-LB Series	DVB-S/DVB-S2 Demodulators
7780DM-VSBQAM	8VSB/QAM Demodulators
7780DM-COFDM	DVB-C/DVB-T Demodulators

- Modular, space-saving, high-density demodulator solutions
- Up to four demodulators on a single card
- ASI and optional IP outputs
- DVB-CI and BISS optional

Note: *All 7703 and 7780 products offer comprehensive monitoring and control via local card edge controls and remotely with SNMP/VistaLINK®. All 7702 products have local card-edge indicators and controls without SNMP.

Passive Splitter/Combiner Arrays

SRF Series 1RU & 3RU Passive Splitter/Combiner Bulk Arrays

- 40-2200MHz operation on 1x2 and 1x4 versions, 800-2200MHz operation on 1x8 and 1x16 versions to handle multiple signal types
- -20dB tap on every common port provides a convenient monitoring point
- High density, compact form-factor:
 - 16 x 1:2, 8 x 1:4, 4 x 1:8 or 2 x 1:16 splitter/combiners in 1RU
 - 64 x 1:2, 32 x 1:4, 16 x 1:8 or 8 x 1:16 splitter/combiners in 3RU



Fiber Optic Transport

Evertz® FacilityLINK fiber optics platform offers the industry's most comprehensive and flexible product line for optical transport and distribution of RF signals. Modular series products are feature-rich and offer convenient integrated solutions by operating in the same chassis with all other 7700/7800 series modules. Convenient standalone products are also available for mounting on or near antennas. Products are focused on delivering the best possible signal quality, ensuring the necessary performance to take advantage of modern payload-maximizing modulation schemes.

In addition to products used for RF signal optical conversion, the FacilityLINK platform offers a complete solution including ancillary devices and accessories such as optical splitters, path protection switches, amplifiers and transceivers for Ethernet and serial data. All products offer the ability to incorporate wavelength multiplexing to reduce fiber counts in fiber-limited applications, saving costs where leased fibers are used. Up to 16 wavelengths may be combined on a single fiber using CWDM, and up to 40 wavelengths may be combined using DWDM. With a comprehensive product portfolio, combined with years of expertise in the field, Evertz® is the best choice for complete RF-over-fiber solutions.

Features & Benefits of Fiber Optics

- Increased distance possibilities without negative impact on signal C/N or slope
- Electrical isolation, mitigating issues such as lightning strikes and ground loops, increasing safety and reliability
- Optical transport provides a secure medium which can be monitored for any abnormal activities via changes in light level
- Improved signal quality compared to coax, providing extra margins and enabling applications requiring signal quality characteristics to be preserved

Applications for Using Fiber to Transport RF Signals

- Designing high-performance or long-reaching RF signal distribution systems using passive optical splitters
- Large local antenna farms, whose areas exceed the practical range of coax
- Reaching remotely located antenna farms when space for local antennas is limited
- Antenna sharing with other facilities
- Connecting to redundant, remote antenna farms, permitting antenna switching to avoid the impact of rain fade and other phenomena between locations
- Creating high-performance infrastructures to meet the signal quality demands of higher-order modulation schemes and coding rates such as DVB-S2/8PSK-9/10FEC
- Protected signal transport in military and high-security installations

SmartMON™ Technology



SmartMON™-enabled products relay important monitoring information such as RF input power, temperature, LNB current and other parameters from the fiber transmitter to the receiver, inband using the connected fiber. This means that the fiber transmitter can be conveniently monitored without requiring its own separate data connection.



2408LT

7708LRA

7700FC

SNMP

Fiber Transmitters and Receivers

7708LT/7708LR *Single Wideband/L-Band Fiber Tx/Rx* **7807LT-2/7807LR-2** *Dual Wideband/L-Band Fiber Tx/Rx*

- 7807LT-2/7807LR-2 provide the industry's highest density solution with up to 30 E/O or O/E conversions per 3RU frame
- Extended frequency response for L-Band, stacked L-Band, over-the-air DTV and other applications
- Automatic, manual and intelligent gain control modes with 0.5dB granularity for flexible level adjustment
- Built-in optical and RF power meters monitor levels and can extend SNMP alarms
- Transmitter includes 13/18V DC (selectable) LNB power with 22kHz tone and LNB current measurement to help monitor LNB health
- Exceptional CNR performance over long distances
- 1310nm, 1550nm, CWDM and DWDM (on 7708LT) transmitters available for short to long haul (>100km) and wavelength multiplexing applications
- Standard and high-sensitivity receivers
- SmartMON™-enabled

7706LT/7706LR *Wideband/L-Band Fiber Tx/Rx*

- Automatic and manual gain control modes
- Transmitter includes 13/18V DC (selectable) LNB power with 22kHz tone

7707IFTA/IFRA *70/140MHz IF Fiber Tx/Rx*

- Built-in optical and RF power meters monitor levels and can extend SNMP alarms
- Automatic or manual gain control modes
- 1310nm, 1550nm, CWDM and DWDM transmitters available for short to long haul and multiplexing applications
- Standard and high-sensitivity receivers

7707CATVTA/CATVRA *CATV Fiber Tx/Rx*

- 50-850MHz operation
- Full 80/110 PAL/NTSC channel load capability
- Built-in optical and RF power meters monitor levels and can extend SNMP alarms



2400PSUA-8 *Eight Channel Standalone DC Power Supply*

- Provides diode isolated DC outputs to power up to eight 2408LT fiber transmitters and/or 2406LR fiber receivers
- Dual, redundant internal power supplies with individual AC inputs
- Active, individual output short circuit and overload protection
- Power supply status is relayed to the 2408LT for complete system monitoring via SmartMON™

2408LT/2406LR *Standalone Wideband/L-Band Fiber Tx/Rx*

- Extended frequency response for L-Band, stacked L-Band, over-the-air DTV and other applications
- Compact standalone package with weatherproof option
- Manually adjustable gain and AGC modes
- Transmitter provides LNB power and 22kHz tone
- 1301nm, 1550nm and CWDM available for short to medium haul and multiplexing applications
- 2408LT is SmartMON™-enabled when paired with 7708 or 7807 series receivers

2307LR Miniature Wideband/L-Band Fiber Receiver



The 2307LR is an RF optical receiver in a revolutionary new form factor. It is a miniature device accepting an optical input on one end, while providing an electrical output on the other. It conveniently connects directly to device inputs, requiring no intermediary cabling. It can be used with Evertz® XRF series routers to provide direct optical inputs. It can also be used with Evertz® 7703DA series to create RF distribution amplifiers with optical inputs. When attached to the input of a 7703PA, a fiber receiver with high power output and slope compensation is created. Since the 2307LR is powered by its connector, it can be attached to any other device that generates LNB power, such as an IRD. As a companion to the 3400 series Optical Splitters, the 2307LR enables optical distribution systems by providing a compact and efficient solution for distributed optical receive locations.

2307LR Features

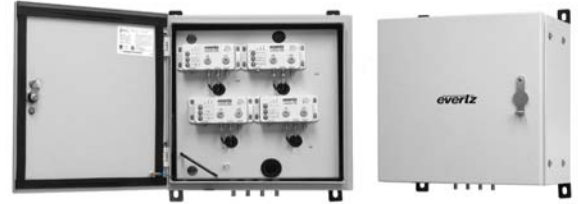
- Saves rack space and cost by not requiring external fiber receiver cards and associated frames
- The industry's smallest form factor
- Optical power and SmartMON™ data monitoring are available when connected to XRF6 routers with appropriately equipped input cards
- Provides a high-performance alternative to coaxial distribution by opening up possibilities for optical infrastructures when combined with Evertz® fiber transmitters and 3400 series optical splitters
- Compatible with all Evertz® 2408LT, 7706LT, 7807LT and 7708LT series L-Band/Wideband fiber transmitters

Integrated Outdoor Fiber Systems

The 2400ODU provides a convenient, pre-integrated package for fiber transport of RF signals. A choice of 2408LT fiber transmitters and 2406LR fiber receivers along with a 2400PSU-8 power supply unit are pre-installed and interwired in a weatherproof enclosure that can be conveniently mounted outdoors. The 2400ODU allows the facility to benefit from the advantages of signal transport over fiber, while not requiring a climate-controlled shelter.

2400ODU Integrated Outdoor Fiber Transport System

- Minimizes length of coax from the LNB, maximizing signal quality
- Any combination of one to four 2408LT fiber transmitters and/or 2406LR fiber receivers may be specified, satisfying uni-directional or bi-directional requirements
- 2408LTs are SmartMON™-enabled when paired with 7708 or 7807 series receivers
- Optional serial data and Ethernet transceivers also available for transport of control signals
- Optional CWDM available to conserve fiber



Optical Signal Distribution



The 3400 Series passive optical splitter platform provides a compact, modular, high-density means of distributing signals in the optical domain. This is ideal for MDU applications, or for creating high-performance distribution systems that do not suffer from the signal attenuation, slope and added noise that can be imposed by coaxial cables and splitting in the electrical domain.

3400FR 1RU, 10 slot frame for optical distribution modules
3400DS2-4 Quad 1x2 optical distribution module

3400DS4-2 Dual 1x4 optical distribution module
3400DS8 1x8 optical distribution module

Optical System Components

Evertz® offers a range of components required for complete fiber transport systems:

7705CWDM series 4, 8 and 16 channel CWDM mux/demuxes
7705DWDM series 8 and 16 channel DWDM mux/demuxes
9000DWDM series 32 and 40 channel DWDM mux/demuxes
9000EDFA series Pre, inline and boost fiber amplifiers
7705DS series 2, 4 and 8 way optical splitters

7707BPX
7707ET series
7708GT
7707DT

2:1 optical path protection switch
10/100 Ethernet transceivers
Gigabit Ethernet transceiver
Serial data transceiver for RS232, RS485, RS422 and GPIO

Note: *All 7707, 7708 and 7807 products offer comprehensive monitoring and control via local card edge controls and remotely with SNMP/VistaLINK. All 7706 products have local card-edge indicators and controls without SNMP.

SNMP Monitoring & Control

VistaLINK® PRO is an SNMP monitoring and control software package that unites all Evertz SNMP-based products as well as third-party systems under a single platform providing customized, detailed, monitoring and 'real-time' equipment configuration. VistaLINK® PRO PLUS provides an advanced user configurable GUI for graphical renditions of the facility. Global views with 'drill down' capability facilitate intuitive and straightforward access to all monitored equipment. VistaLINK® PRO provides comprehensive alarm indication, logging and database management. An optional autoreponse/scheduler allows programming of hardware & router changes to be triggered by incoming alarms or exceeded parameter thresholds, enhancing facility reliability and simplifying workflow through automation of common tasks. Integration options are available to extend VistaLINK® around third-party and/or legacy equipment for unified control systems.



For information on antenna's and satellite products, refer to Evertz Simulsat brochures.

For detailed product specifications and ordering information, please contact Evertz sales or visit www.evertz.com



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XPRF 14

128 X 128

128x128 Protected RF Router/Matrix Switch



- Frequency Range: 850MHz – 2300MHz
- Very Compact Matrix – 14 RU Chassis
- Scalable to up to 1024x1024
- All components (including fans) are modular
- Front-accessible and Hot-swappable – Cables never need to be removed
- Redundancy in every active component, including input/output/midpoint cards, power supplies and controllers
- The only large-scale RF Router on the market to offer optional integrated LNB power
- Largest integrated touch-screen (19") display
- Built-in Spectrum Analyzer
- M&C – SNMP Ready Evertz VistaLINK PRO Software available
- Maintain continuity – Sophisticated self-diagnostics monitor signal paths in the router. In the event of any fault detected the router will quickly and automatically re-route the signal.

XPRF14 - 128x128

Specifications

System:

Matrix Sizes:	8x8 to 128x128 in a 14RU frame, 1024x1024 maximum expanded system size, systems may be square or non-square in size
System Expansion:	Inputs or outputs are expandable in increments of 8, expansion beyond 128x128 requires additional frames and external splitting/combining
Impedance:	75 Ω (50 Ω optional)
Connector Type:	BNC per IEC 61169-8 Annex A (SMA, F-type optional)
Gain Range (manual gain mode):	-25 dB to +25dB in 1dB steps

RF Specifications:

Bandwidth:	850MHz to 2250MHz
Freq Response:	± 1.5 dB over the passband, ± 0.5 dB over any 36 MHz bandwidth
Isolation:	>60dB output to output >60dB input to input >55dB input to output
Return Loss:	> 15dB (input and output)

LNB Power:

Voltage:	18VDC, off (selectable)
Current:	400mA
Protection:	Active: short circuit, overload

Communication & Control:

Serial:	RS-232/RS-422 selectable – Female 9-pin D connector
Ethernet:	SNMP, Quartz Protocol, Web Browser
Panels:	CP2116-E, CP2232-E via direct Ethernet connection, other Evertz panels over Ethernet through Magnum or Magnum SE
Software:	VistaLINK PRO SNMP NMS, VUE Configurable graphics environment

Electrical:

AC Input:	Auto ranging, 100 to 240V AC, 50/60Hz
Number:	5 (3 for router power, 2 for LNB power)
Connector:	IEC 60320 - 1 per power supply

Physical:

Dimensions:	24.5"H x 19"W x 18.5"D (622mm H x 483mm W x 470mm D)
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